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Soil and Water Conservation News

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Soil Conservation Service

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Comments:

From the SCS Chief

Improving Management Keeps Programs Strong

We are proud to say that the Soil Conservation Service is one of the leading agencies in carrying out Reform '88 at the U.S. Department of Agriculture (USDA). Reform '88 is the President's initiative to streamline management throughout the Federal Government. The target for completing the program is 1988.

A committee of top executives from four USDA agencies, including SCS, and four administration staffs developed the Department's Reform '88 plan, which was endorsed by Secretary of Agriculture John R. Block in 1983. The plan insures that USDA programs receive the management support they need while using dollar-saving administrative techniques. It also assures continued prompt and effective delivery of program services.

Over the past several years, SCS has taken steps which can be considered forerunners of Reform '88. For example, SCS established the Information Resources Management Division; computerized its property reports; implemented the Harris communication system; consolidated four cartographic units into a single unit at our South National Technical Center in Ft. Worth, Tex.; and switched to metered mail.

Under Reform '88, we are helping USDA to develop systems that will facilitate reporting procedures in personnel, equal opportunity, financial management, and administrative services.

In a recent presentation to Secretary Block on Reform '88 progress, Department officials highlighted three SCS activities: the increased use of automated data processing for supporting conservation programs; the current study on consolidating administrative staffs; and travel management improvements that saved $167,000 last year.

The automation of many SCS systems will make information flow faster and more efficiently to and from National Headquarters, saving time for our employees at all levels and saving tax dollars. These efforts will also help to keep our soil and water conservation programs strong.

We are now beginning to realize savings from some of our efforts. We encourage each of you to look for additional ways to enhance and support the Secretary's Reform '88 activities and increase the effectiveness of your own operation.

Let us know if you have ideas to share.

Cover: Erosion on an unprotected cornfield in west Tennessee following a brief rainstorm. (Photo by Tim McCabe, visual information specialist, Public Information, SCS, Washingon, D.C.)

John R. Block
Secretary of Agriculture

Peter C. Myers, Chief
Soil Conservation Service

All programs of the U.S. Department of Agriculture are available to everyone without regard to race, creed, color, sex, age, or national origin.

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News Briefs

Food and Agriculture Councils Challenged to Increase Conservation

Secretary of Agriculture John R. Block has announced that he will present the Distinguished Service Award—the U.S. Department of Agriculture's (USDA) highest honor award—to the local Food and Agriculture Council (FAC) and State FAC that do the best job of advancing resource conservation in 1984. USDA agency leaders in every State and county are organized into FAC's who are responsible for coordinating certain activities of the agencies.

The Secretary is calling upon the FAC's to plan and carry out a special effort to advance resource conservation in 1984 as part of new conservation initiatives designed to encourage more farmers and ranchers to reduce soil erosion and improve natural resources. (See "Comments From the SCS Chief" on page 2.) In reviewing what the FAC's accomplish in 1984, the Secretary will pay special attention to what the groups do to:

- Involve all agencies represented on the FAC.
- Involve State and local officials and local communities.
- Foster special initiatives on the part of businesses, farm and conservation groups, citizen organizations, and others in the private sector.
- Enlist volunteers for meaningful activities.
- Use and promote innovative ideas for resource conservation improvements.
- Increase conservation significantly on private and public land.
- Adapt or mesh programs of the FAC agencies so that they help to achieve resource conservation aims of USDA and local communities.
- Bring cost savings to the Government through improved efficiency, or accomplishment of more conservation with existing funds.

There is a wide variety of activities through which FAC's can accomplish these goals. One activity could be to encourage the planting of vegetation along edges of fields, highly erosive slopes, roads, and waterways to improve water quality and provide wildlife habitat.

Other activities could be organizing volunteers to thin forests for wood energy, fire control, and timber stand improvement; coordinating resource planning where public and private lands are intermixed so that managers could get a volume discount on seed, equipment, and other conservation needs; emphasizing ways to conserve water in agriculture and other land uses; working together on research on the effects of soil erosion and communicating the results to land users and the public; and helping interested agencies and groups to increase the use of conservation tillage by spreading information on how it can be adapted to more soils and more farming operations.

FAC's could also assist local governments with data and public information that can be used in their farmland retention efforts; convince the business community to recognize individual and group accomplishments in resource conservation; encourage resource conservation themes in local essay, photo, or poster contests; and conduct State and local awards programs providing certificates of accomplishment to private citizens.

One major goal of FAC activities is to increase the awareness of conservation issues among private citizens. Activities should emphasize the importance of protecting and improving soil, water, forest, and other natural resources to insure the health of our Nation's economy, the quality of our environment, and the strength of our agriculture.

SCS to Improve Use of Erosion Prediction Equations

The Soil Conservation Service has expanded the responsibilities of the National Sheet and Rill Erosion Committee to include all forms of soil erosion.

The committee, renamed the National Erosion Prediction Committee, will recommend policy, procedures, and research needs to improve erosion prediction models and their use by SCS personnel. The committee will distribute its work among at least seven subcommittees covering: sheet and rill erosion, ephemeral gully erosion, grazing land erosion, forest land erosion, flooding and sediment delivery, wind erosion, and soil erodibility and erosion tolerance.

SCS has used the Universal Soil Loss Equation (USLE) for sheet and rill erosion and the Wind Erosion Equation (WEQ) since the early sixties. Future research by the U.S. Department of Agriculture's Agricultural Research Service (ARS) will improve these equations to include the prediction of ephemeral gully erosion and erosion or deposition in entire landscapes and watersheds.

Such models will actually represent the physical processes of soil erosion, movement, and deposition under various weather and management conditions. Major advances in this direction have been made through the CREAMS (Chemicals, Runoff, and Erosion from Agricultural Management Systems) model.

Based on ARS research, the National Erosion Prediction Committee may recommend changes in SCS guidelines to reflect new knowledge.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

1983 Yearbook Features Natural Resources

According to Secretary of Agriculture John R. Block, "It is appropriate that *Using Our Natural Resources* is the theme of the 1983 Yearbook of Agriculture. We have a remarkable story to tell of our Nation's natural resources. The yearbook is packed with interesting information about our soil, water, forests and woodlands, wilderness, wildlife, outdoor recreation, and urban-suburban greenbelts."

Using the natural resources of the United States wisely is a major challenge of the eighties, Secretary Block said in the foreword to the yearbook. He said the new yearbook gives an idea of what's involved in that challenge, and how the Nation can meet it.

Sections of the yearbook include physical, biological, and social components; managing natural resource systems; and human dimensions in resource management. One of the articles describes efforts to prevent another Dust Bowl in the Great Plains, citing conservation tillage as the most critical part of a management system to protect the soil from wind erosion.

Another article describes cattleman Jim Martin's family farm. Martin was one of the first no-till farmers in Decatur County, Ind. In addition to no-till, Martin's conservation plan includes parallel terraces with underground tile outlets, a grassed waterway, a grade stabilization structure, sediment control basins, a manure pit, and rotation grazing.

Other yearbook articles discuss the need to conserve irrigation water and protect important farmland from unnecessary development. The yearbook's concluding article discusses the Nation's conservation agenda for the eighties.

Copies of *Using Our Natural Resources* are available for $7 each from the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington, D.C. 20402. (Stock No. 001-000-04387-1.) Copies are also for sale at GPO bookstores in many cities. In addition, each Member of Congress will have a limited number of copies available free to the public.

Yearbook of Agriculture: Historically Speaking

Using Our Natural Resources is the 84th volume to carry the title, Yearbook of Agriculture. This designation formally began with the 1894 volume and a yearbook has been issued annually since, with a few exceptions due principally to wartime suspension of publication.

The yearbook stems from the 1840's, when Federal agriculture was under the Commissioner of Patents. In 1849, the Commissioner's annual report was issued in two parts, and Part II, Agriculture, was a forerunner of the present yearbook. Congress distributed copies to the public. In 1862, the Agriculture Department was founded and took over the annual agricultural report, which Congress continued to distribute.

Until after World War I, the yearbook consisted largely of reports by Department bureaus, crop and livestock statistics, and the Secretary's Annual Report.

Yearbooks from 1948 on remain in print with three exceptions: *Trees,* 1949; *Insects,* 1952; and *Soil,* 1957.

Canada geese at sunrise over Maryland's Eastern Shore grace the cover of the 1983 Yearbook of Agriculture.

Photo by Tim McCabe, visual information specialist, Public Information, SCS, Washington, D.C.

Soil Erosion-Productivity Link Called a Top Conservation Research Need

Finding out how much crop productivity is reduced by soil erosion is essential to making certain that U.S. Department of Agriculture efforts to control erosion are on target, says Peter C. Myers, chief of USDA's Soil Conservation Service.

At a January 1984 meeting with the heads of USDA agencies concerned with soil and water conservation, Myers said, "We know excessive soil erosion sooner or later reduces productivity and increases costs. But we don't know exactly when or under what conditions.

"We must understand this basic relationship if we ever hope to deal with critical erosion in a cost-effective way."

Equally important, he said, is the need for more research and education on conservation tillage. He called conservation tillage "one of our best and most cost-effective tools in the fight against erosion."

But, he said, "in some places we have concerns—such as weed and pest control problems, the economic return to the farmer, and the effects of conservation tillage on soil and water quality—that we need to know more about."

Myers said the response of USDA's research and education agencies to a call last year for increased conservation emphasis was "outstanding." Specifically, he praised the work those agencies have done in improving and testing computer models linking erosion and productivity, in conducting research and education related to conservation tillage systems, and in starting research into the offsite effects—including water pollution—of soil erosion.

The officials with whom Myers discussed the Nation's soil and water conservation needs are the administrators of USDA's Agricultural Research Service, Cooperative State Research Service, Economic Research Service, Extension Service, and Forest Service.

Myers also listed nine other "high priority" research needs: predicting soil loss from ephemeral cropland gullies; developing improved crop production systems for areas with limited water supplies; determining net economic benefits of various conservation practices; developing better, lower-cost methods of controlling gullies; collecting data on the effects of new grazing systems; developing better ways of predicting soil erosion on rangeland; identifying social and economic factors that affect adoption of conservation practices; improving spillway design; and accelerating research on water quality.

Ninth North American Prairie Conference To Be Held

The Ninth North American Prairie Conference will be held in Moorhead, Minn., July 29 through August 1, 1984. The theme of the conference, hosted by Concordia College, Moorhead State University, is The Prairie: Past, Present, and Future. The conference program includes invited speakers, contributed papers, symposia, workshops, poster sessions, and field trips devoted to various aspects of prairie ecosystems. The ecology, management, restoration, classification, interpretation, utilization, and preservation of prairies are some of the topics scheduled for consideration. Others include prairie wetlands, landscaping with prairie species, and the ecology of pre-European people on the prairie. The latter topic is being given special emphasis at the 1984 meeting. Preconference and postconference field trips are also planned for those interested.

For further information on the conference, contact Dr. R. H. Pemble, Department of Biology, Moorhead State University, Moorhead, Minn. 56560, or telephone (218) 236-2572.

Funds Available for Mined Land Reclamation

Fifteen States will share $7.5 million in Federal funds in 1984 to help people reclaim non-Federal rural land damaged by coal mining. The funds were included in the new appropriations act for the U.S. Department of the Interior. The act also included $3.1 million to help fund existing contracts made to reclaim coal-mined land.

The new funds are expected to finance 54 high priority reclamation projects in the following States: Alabama, $399,000; Arkansas, $441,000; Illinois, $204,000; Iowa, $335,000; Kentucky, $1,114,000; Maryland, $399,000; North Dakota, $15,000; Ohio, $815,000; Oklahoma, $160,000; Pennsylvania, $1,505,000; Tennessee, $282,000; Texas, $93,000; Virginia, $589,000; West Virginia, $985,000; and Wyoming, $134,000.

Congress authorized the reclamation program as part of the Surface Mining Control and Reclamation Act of 1977, to provide individuals with cost-sharing and technical assistance in reclaiming land disturbed by coal mining.

Coal-mine operators contribute up to 35 cents a ton to the abandoned mine reclamation fund, part of which goes to finance the rural abandoned mine reclamation program. Projects with the highest priority are those where there are dangers to life and property.

USDA's Soil Conservation Service cooperates with the Department of the Interior, State and local governments, private landowners, and soil and water conservation districts in administering the program.

History Symposium Draws Near

The Agricultural History Society, University of Missouri-Columbia, and the Soil Conservation Service will hold a multidisciplinary symposium on the History of Soil and Water Conservation at Columbia, Mo., May 23–26, 1984. Among the speakers will be agricultural economist Sandra Batie, agronomist Chris Johannson, historian Harold Pinkett, Canadian research officer J. W. Morrison, and British experts on conservation in Africa, Norman Hudson and Michael Stocking. For program and registration information, contact Susan Flader, Department of History, University of Missouri, Columbia, Mo. 65211, or Douglas Helms, Historian, Soil Conservation Service, P.O. Box 2890, Washington, D.C. 20013–2890.

Endowment Honors Farm Couples for Conservation Work

The National Endowment for Soil and Water Conservation has named three farm couples as winners in its first annual awards program.

The winners are Allen and Jane Franks, Kentucky; Dr. William and Joyce Hansell, Oregon; and Richard and Darlene Nyman, Wisconsin. Each couple was presented with a $1,000 check at a recent White House ceremony.

The Franks were cited for waste management work, the Hansells for water resource management, and the Nymans for erosion control.

Local and State organizations in 35 States had nominated one farmer or rancher from each State. The Endowment's technical advisory committee reviewed the nominees and recommended 10 finalists. The Endowment's board of governors accepted the committee's recommendations and chose three winners from among them.

The other finalists, who were presented with certificates at the ceremony, were: Jim and Lou Martin, Indiana; Robert and Dolores Paris, Kansas; Vernon and Dorotha Foster, Maryland; Allen and Irene Hardy, Michigan; Norris and Dorothy Hanford, Montana; Furnie Lee and Margaret Boyette, North Carolina; and Marion and Lenore Olsen, Utah.

The Endowment began the awards program both to give national recognition to conservation farmers and ranchers and to inspire others.

Most of the 35 nominees and all of the finalists use conservation tillage as well as other conservation practices. The Martins' family farm is the subject of an article in the U.S. Department of Agriculture's 1983 Yearbook of Agriculture.

For more information, write to the National Endowment for Soil and Water Conservation, 318 Fourth Street, N.E., Washington, D.C. 20002, or telephone (202) 546–7407.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

Mid-America Districts to Bury Time Capsule

The Mid-America Association of Conservation Districts will sponsor a 50th anniversary jubilee in Kansas City, Kans., on April 12–13, 1984. Officially named "Mid-America's 50th Year Observance of the Organized Soil and Water Conservation Movement," the celebration will include a 50-year time capsule burying ceremony and a formal reception on the 12th and a 1-day symposium on the 13th.

More than 1,000 people are expected to attend the celebration. For more information, contact Paul J. Sweeney, district conservationist, Soil Conservation Service, 1709 North 98th Street, Kansas City, Kans. 66111.

New Award Announced for Public Employees

The National Parks & Conservation Association (NPCA) has announced its first annual Stephen T. Mather Award to reward "the stalwart defenders of America's natural heritage who put commitment to principles ahead of personal gain."

NPCA is the only national conservation organization dedicated to the protection and improvement of the national park system. The award was named in memory of the first director of the National Park Service to honor public servants involved in the management and protection of natural resources.

According to Paul C. Pritchard, president of NPCA, "The Mather Award will be given to the public employee who, first and foremost, is guided on the job by the principle that the protection of our national heritage should transcend any political or bureaucratic considerations. We hope that the Mather Award will encourage private citizens and organizations across the country to show their gratitude and appreciation for the dedicated and principled actions of a public servant by nominating him or her for the award."

Seven regional finalists and one national winner will be selected each year in May. The national winner will receive a cash prize of $1,000.

Eligible recipients of the award may be any public servant employed at the Federal, State, county, or local level in the field of natural resource management and protection.

For more information about eligibility and nomination requirements, write to the Mather Award Coordinator, NPCA, 1701 18th Street, N.W., Washington, D.C. 20009.

Equipment Rental Spells Conservation Tillage for Indiana County

A recent survey by the Conservation Tillage Information Center (CTIC) shows more than half of the 703 member conservation districts surveyed are renting equipment to encourage conservation tillage.

For example, the St. Joseph County Soil and Water Conservation District (SWCD), one of the survey participants, is now in its fifth year of a very successful rental program.

The St. Joseph County SWCD's program began with a chisel plow in 1979, at the recommendation of then Soil Conservation Service District Conservationist Bruce Julian, who is now the SCS field specialist for the CTIC.

The St. Joseph County SWCD has owned as many as five machines and now owns three, not including a no-till planter borrowed from a local farm equipment manufacturer. Last spring, 62 landowners rented the SWCD's no-till planters for 1,686 acres of corn and soybeans. In addition, about a dozen farmers planted no-till alfalfa or wheat last summer and others used a ridge cultivator on 135 acres.

Before the SWCD even had its annual conservation tillage meeting this year, it had signed up 250 acres for no-till corn and soybeans and 75 acres for no-till alfalfa. The district expects at least 100 people to attend the meeting.

The SWCD and SCS staff help the farmers to be sure they use the equipment properly and give no-till a chance to work. SCS District Conservationist Wayne Stanger provides technical help. The SWCD has three part-time employees to oversee equipment use at planting time, led by Steve DeCloedt, the SWCD's full-time county conservationist.

The farmers get onsite help right up to and including the planting. The SWCD and SCS staff give the farmers advice for all operations, from pesticides and fertilizer applications to seeding rates and machinery adjustments.

Later in the season, the county extension agent and SCS personnel check the fields for pests.

After harvest, the staff helps farmers compare profits of the no-till fields with conventionally planted fields, taking into account all factors, including soil loss. So far most no-till yields have been equal to or better than those produced by conventional tillage.

In 1980, there were one or two no-till planters owned by St. Joseph County farmers; now there are at least 35. A local equipment manufacturer has started making no-till planters and sold the SWCD its second planter, later donating attachments and loaning another planter. In turn, the manufacturer has been able to observe farmer interest and test equipment.

Another mark of the program's success is the fact that two local equipment dealers have started their own rental programs, allowing the SWCD to begin slowly phasing out its program.

When the chisel plow had served its purpose—to bridge the gap between conventional tillage and no-till—the SWCD supervisors sold it. Now that they are switching their emphasis from no-till corn to no-till soybeans, they have sold a no-till corn planter.

Last spring, because of this change in emphasis and farmer interest, the SWCD bought a no-till drill for soybeans and pasture reseeding.

This spring, to meet requirements of a variable cost-sharing program by the U.S. Department of Agriculture's Agricultural Stabilization and Conservation Service (ASCS), the SWCD will rent equipment only for fields with a soil loss of more than 5 tons per acre per year.

Part of the credit for the equipment rental's success must go to the SWCD's 17 active associate supervisors, as well as the board of supervisors. Most of the associate supervisors are full-time farmers, but they also include the county ASCS director and extension agent. Associate Supervisor Eugene Myers, who is the county's Farm Bureau president, says the American Farm Bureau Federation conservation tillage campaign and the St. Joseph County SWCD's success caused the county Farm Bureau to join the campaign.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

Based on an article in the December 12, 1983, issue of *Farm Bureau News*.

In 1980, John Wojtysiak used his combine to harvest corn on the St. Joseph County Soil and Water Conservation District's first tillage test plot. The 10-acre plot had three different tillage treatments: no-till, chisel plow, and conventional. The no-till corn, planted in corn residue, had the highest yield. The plot was near the county fairgrounds, and many people toured it during the fair.

CONSERVATION Research Roundup

Planning Begins for Soil Tilth Center

In 1987, the U.S. Department of Agriculture's National Soil Erosion Laboratory at Purdue University, West Lafayette, Ind., should have a new relative, the USDA Soil Tilth Research Center at Iowa State University (ISU) in Ames, Iowa.

Authorized in 1983, against a background of an intensified national concern about soil and water resources, planning for the new center has begun. Congress approved $800,000 for USDA to plan for the complex of buildings that will be built near ISU's agronomy building.

Soil tilth is a general term that farmers and scientists use to describe a soil's physical fitness for farming.

Tilth and erosion are very closely related because erosion destroys soil tilth, and a soil with poor tilth is usually more erodible than one with good tilth. As a result, the Soil Tilth Center will work closely with USDA's Agricultural Research Service's (ARS) National Soil Erosion Laboratory, which began operating almost 3 years ago. (See article in the July 1981 issue of *Soil and Water Conservation News.*)

The Soil Tilth Center joins ARS's nationwide network of more than 140 research sites. All of the researchers work in cooperation with State agricultural experiment stations, other Federal agencies such as the Soil Conservation Service, and private organizations.

Early this year, a committee, consisting of public employees and private citizens throughout the Nation, will identify the center's mission and goals, along with its personnel and space requirements.

Donald L. Comis,
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

New Sprayer May Mean Less Water, Herbicides Needed for Weed Control

Researchers are testing a new type of sprayer that works with almost undiluted herbicides and could halve the amount of chemicals needed for some uses.

Dr. William Duke, a weed scientist and professor of agronomy in the New York State College of Agriculture and Life Sciences at Cornell University, Ithaca, N.Y., is one of the researchers testing the sprayer for large-scale commercial use.

The sprayer is called a controlled droplet applicator (CDA) because it controls the size and uniformity of herbicide solution droplets. The CDA sprayer has an electrically powered, cone-shaped nozzle that rotates at a high speed, the droplets becoming finer as the speed increases. Conventional hydraulic sprayers produce random-sized droplets.

Duke has found that at a speed of 2,000 revolutions per minute, the CDA nozzle produces a droplet size that is ideal for weed control because it is less susceptible to drifting, even under moderately windy conditions.

That is just one of many advantages the CDA sprayer may have over conventional sprayers. The major advantage is its ability to control weeds with herbicides dissolved in only 1 to 3 gallons of water per acre, compared to the conventional sprayer's 20 to 40 gallons per acre.

Farmers will be able to save water and do away with heavy spray tanks, possibly switching to pre-mixed chemicals in small containers. They will save fuel by towing lighter tanks and by reducing the number of trips to refill the tanks.

The pre-mixed containers would eliminate the work and danger of mixing chemicals and disposing of leftover chemicals.

And recent tests at Cornell raise hope that even the amount of chemicals needed might be reduced, especially for post-emergence herbicides.

Disease Suppressive Soils Studied

Disease suppressive soils are the object of research at Oklahoma State University (OSU), Stillwater, Okla. According to OSU Plant Pathologist Ken Conway, "A disease suppressive soil is a naturally occurring soil, which reduces the amount of disease problems normally seen in an area."

Conway and his associates have been investigating factors which cause a soil to be suppressive to harmful micro-organisms. He says there are two types of soil suppressiveness, biological or abiotic (a nonliving cause). An abiotic condition exists when the pH or mineral balance is such that the soil will not support harmful bacteria or fungi. Biological suppressiveness occurs when beneficial micro-organisms increase to the point they control harmful ones.

In the OSU research, two lots of soil were autoclaved to kill all organisms and two other lots were untreated. *Rhizoctonia solani,* a fungus which causes damping off disease in vegetables, was added to each of the soil samples. Pepper seeds were planted in each of the four soil sample lots, and the amount of damping off disease was recorded.

In nonautoclaved soil, an average damping off of 14 percent was recorded. When the Rhizoctonia was added, disease increased to 17 percent. Conway says the small increase indicated that something in the soil—a natural barrier—was suppressing the activity of the fungus.

When Rhizoctonia was added to autoclaved samples, the damping off of pepper seedlings jumped to 94 percent.

"This told us we had lost the natural barrier by sterilizing the sample, which meant a biological organism had been controlling the Rhizoctonia," Conway says.

Current OSU research is being directed at identifying these beneficial micro-organisms and adding them to a gel in which seeds can be suspended for planting.

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New Publications

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New Publications

Sprinkler Irrigation: Equipment and Practice

by Melvyn Kay

Although written primarily for vocational students studying irrigation, this text should be of interest to engineers, agriculturalists, and others involved in irrigation at both the middle and professional levels.

It provides practical information on a wide range of sprinkler systems from simple hand-moved equipment and spray-lines to the more sophisticated mobile raingun and center-pivot machines. Details are given about the efficient and safe use of this equipment in the field and how it should be maintained to provide long and useful service.

Extensive use is made of diagrams and photographs to illustrate equipment and operating principles.

Copies of this paperback are available for $16.95 from Batsford/David & Charles, North Pomfret, Vt. 05053.

Forging New Rights in Western Waters

by Robert G. Dunbar

The westward migration of Americans exerted a profound influence on American history and life. Attitudes, institutions, and laws pertaining to water are only a part of the influences, but significant ones. Eastern views toward water—rooted, or immersed—in English common law proved insufficient for settlement of the semiarid West. Westerners, confronted with practical problems of supply and equitable distribution of water, coped by creating new laws and governmental, corporate, and private institutions.

Robert G. Dunbar, emeritus professor of history at Montana State University, brought several decades of study to this complex and unfinished process. Numerous parties—miners, farmers, lawyers, engineers, irrigation companies, booming towns, State legislatures, and courts—contributed to the evolution of water rights. Overall, the retreat from the doctrine of riparian rights to an indigenous system was, and is, a complicated story. The reader, whether expert or novice, can be thankful to Dunbar for a volume which gives us an understanding of the events behind this development.

Major portions of the book include early irrigation, history of the development of the doctrine of prior appropriation, State systems of water right enforcement, interstate cooperation and rivalry, ground water rights, and Federal-State relationships.

Resource conservationists in the West must grapple with water rights. If an understanding of events leading to the present system is of any benefit to increasing the level of patience, this is the book to read.

Forging New Rights in Western Waters is available for $19.95 from the University of Nebraska Press, 318 Nebraska Hall, 901 North 17th Street, Lincoln, Nebr. 68588-0520.

Review by
Douglas Helms, historian,
Public Information, SCS,
Washington, D.C.

Farm Appraisal and Valuation

by William G. Murray, Duane G. Harris, Gerald A. Miller, and Neill S. Thompson

Updated to its sixth edition, this book should be of special interest to farm appraisers, assessors, farm loan officials, highway land appraisers, and to educators in agricultural economics. It emphasizes soil productivity evaluations and well-reasoned judgments of the appraiser over appraisal forms and statistical calculations.

One author has added to this edition a chapter on special use valuations under the Tax Reform Act of 1976. A thorough, careful discussion probes the intent to value the family farm on the basis of productivity and annual income rather than on market value of the land and the problems encountered in such appraisals.

Another author has added chapters on soil evaluation and soil survey information, and their use in appraisal and valuation of farmland by practicing appraisers, assessors, farm managers, and farmers.

The authors probe the values of sale price records, sales transaction records, and sale price comparisons. Discussions investigate income and expense estimates, estimation of value by income capitalization, and building inventories and costs.

With the primary emphasis on soil quality, this book shows that on many farms, orchards, and ranches the producing ability of the soil is the major factor determining value.

A copy of this book is available for $22.95, plus $1 postage and handling, from Iowa State University Press, 2121 South State Avenue, Ames, Iowa 50010, or call (515) 294-5280.

Surface Mining: Soil, Coal, and Society

by the Committee on Soil as a Resource in Relation to Surface Mining for Coal, National Research Council

Because mining is related to a number of major public policy issues in this Nation—such as energy, agriculture, the environment, and economics—the Bureau of Mines compiled this report which involves a detailed study of soil as a resource in relation to surface mining for coal.

The publication primarily provides an indepth look at the effects of surface mining for coal on the use of another resource, soil. The report is informative because the committee which prepared it includes representatives from the disciplines of agronomy, soil chemistry, surface mining, ecology, agricultural engineering, agricultural economics, and anthropology and individuals from mining companies who are responsible for the reclamation programs at the mines.

The report is divided into three major topic areas: Soil Genesis, Mining and Reclamation, and Values and Choice. All three areas help to provide answers to the two basic questions concerning the relation of the soil resource to surface mining for coal: What kinds of planning and management are possible with regard to the effects of surface coal mining, and how are we to choose among the possible goals of management?

Copies of this report are available for $11.50 each from the National Academy Press, 2101 Constitution Avenue, Washington, D.C. 20418.

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